

SeaBat® T51-R

Revolutionary technology
Outstanding performance



Revolutionary combination of high resolution, high frequency and high efficiency

The SeaBat T51-R is the latest addition to the leading SeaBat T-series product range, built on the shoulders of the renowned SeaBat T50 – but with four times the resolution.

The SeaBat T51-R brings on a revolutionary and industry-unique true 800kHz sonar which allows for surveys with the highest level of detail while still maintaining an amazing up to seven times water depth survey efficiency. The best of both worlds.

Besides the revolutionary 800kHz performance, the SeaBat T51-R also comes with a flexible 350-430kHz lower frequency range – intended for those surveys where extended range performance is required, giving you a truly flexible solution for all occasions.

SeaBat T51-tailored autonomous AI sonar controls, a SeaBat-unique innovation, provides reliable data and truly hands-free sonar operation – allowing for higher survey efficiency with reduced operator workload.

The SeaBat T51-R comes with an optional industry leading fully integrated Inertial Navigation System for accurate sensor time tagging and motion stabilization.

SeaBat T51-R standard configuration

Rack-mounted Sonar Processor (RSP+)

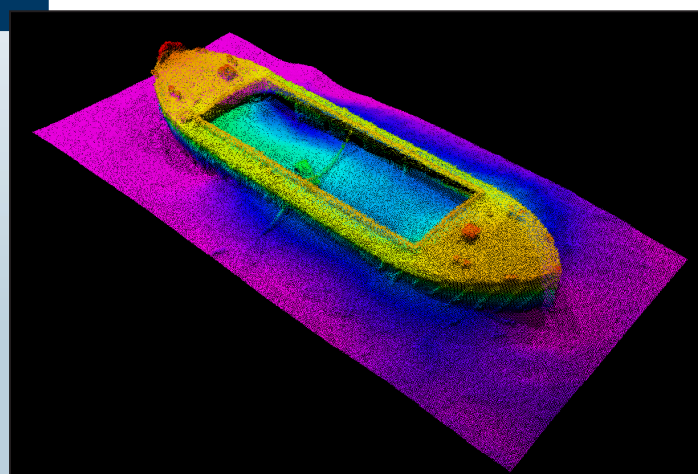
- Single point for all cable connections – for fast mobilization
- Accurate sensor time tagging and motion stabilization from the optional integrated INS
- 25m cable configuration
- 2U form factor in standard 19" rack

SeaBat T51 sonar head assembly

- Revolutionary high frequency band 700-800kHz
- Flexible lower frequency 350-430kHz
- Lightweight sonar bracket
- Robust titanium housing
- Less than 8kg in water

PRODUCT BENEFITS

- Revolutionary and frequency flexible 700-800kHz sonar array for up to seven times water depth efficiency with extreme resolution to improve your decision making
- 350-430kHz sonar operation for traditional and extended range survey requirements maximising your sonar usage
- Autonomous AI Sonar Controls – allowing the operator to focus on other tasks than controlling the sonar
- Unprecedented clean and ultra-high data quality for faster operational surveys and reduced processing time
- Three-year standard warranty to give you peace of mind





SeaBat® T51-R

Revolutionary high-resolution Multibeam Echosounder with Autonomous AI sonar controls

SEABAT T51-R SYSTEM SPECIFICATIONS

Input voltage	100-230VAC 50/60Hz
Transducer cable length	25m (standard) Optional: 10m, 50m or 100m
Temperature (operational / storage)	Rack-mounted Sonar Processor: -5°C to +45°C / -30°C to +70°C Sonar wet-end: -2°C to +36°C / -30°C to +70°C

	height [mm]	width [mm]	depth [mm]	weight [kg/air]	weight [kg/water]
T51 Rx (EM7222)	102.0	460.0	90.7	8.2	3.9
T51 Tx (TC2186)	86.6	93.1	280	5.4	3.4
Rack-mounted Sonar Processor * Standard 19" rack-mount	88 (2U)	478*	462	12.3-13.8	N/A
Teledyne Type 20/30 IMU	x123	118	95.6	3.0	1.6

T51 Acoustic performance	350-430kHz		700-800kHz	
	Across-track receiver beam width¹	0.5°		0.25°
Along-track beam width¹	1°		0.5°	
Number of beams	10 - 1024			
Swath coverage (up to)	10°-170°			
Typical Depth (CW²)	200 meters		>85 meters	
Max Depth (CW²)	300meters		Est. >125 meters	
Typical Depth (FM³)	225 meters		>85 meters	
Max Depth (FM³)	350 meters		Est. >150 meters	
Ping rate (range dependent)	Up to 50 pings/s			
Pulse length (CW)	30 – 300µs			
Pulse length (FM)	300µs – 5ms			
Depth resolution	6mm			
Depth rating (sonar head)	50 meters			

Teledyne INS Type -20*	Roll/Pitch	Heading ⁴	Heave ⁴	TrueHeave ⁴	Optional postprocessing with POSPac MMS. Optional Fugro MarineStar®.
	0.02°	0.015°	5cm/5%	2cm/2%	
Teledyne INS Type -30*	Roll/Pitch	Heading ⁴	Heave ⁴	TrueHeave ⁴	Optional Fugro MarineStar®.
	0.01°	0.010°	5cm/5%	2cm/2%	

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description

*Optional

¹ Nominal values at 400kHz and 800kHz

² This is a depth range within which the system is normally operated, from the minimum depth to a depth value corresponding to the max. swath -50%. Deepest point in primary test area was 85 meters. Swath coverage was ~250m @700kHz and ~175 @800kHz

³ This is the single value corresponding to the depth at which the swath is reduced to 10% of its max. value.

For actual swath performance refer to Product Description. Estimated based on performance graphs

⁴ With 4m GPS base line. Heave 5cm/5% whichever is greater for periods +/- 20sec

T51-R SCOPE OF SUPPLY

- Receiver EM7222
- Projector TC2186
- Rack-mounted Sonar Processor
- 25m receiver cable
- 25m projector cable
- Wet-end bracket
- Nuts and bolt for ease of installation
- Three-year warranty

OPTIONAL EXTRAS

- Integrated INS Type-20 or Type-30
- 10m, 50m or 100m cable
- Hydrodynamic fairing
- Dual-head bracket
- Teledyne RESON Sound Velocity Probe
- Teledyne PDS Survey Package
- Teledyne RESON Service Level Agreements
- Motion and positioning sensors
- X-Range - improves range and reduces external noise
- Multi-Detect - multiple detections for enhanced detail over complex features and water column targets
- FlexMode – increases data density where you need it most
- Capable of dual head operation with up to 2048 beams



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